

## REMARKS

This amendment is submitted in response to the final Office Action mailed on February 11, 2008. Claims 1-3, 5-15, 17-19, 21-23 and 25-27 are pending in the application. Claims 26 and 27 are withdrawn from consideration. Claims 1-3, 5-15, 17-19, 21-23 and 25 have been rejected.

Claim 9 has been amended to state that the coating material consists essentially of asphalt and filler. Basis is found in the specification at page 3, lines 25-28 where it is stated that a typical asphalt roofing shingle has a coating material that includes asphalt and a filler. Also, original claim 4 states that the organic material in the coating material is asphalt. New claims 28-31 have been added directed to particular embodiments of the amount of elemental sulfur added and the increase in tear strength; basis is found at page 5, lines 9-10 and page 6, lines 1-4. Favorable reconsideration of the application, as amended, is respectfully requested.

### 35 U.S.C. 103(a) Rejection Over Miller et al. in View of Marzocchi et al.

Claims 1, 3, 5-8 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563). Applicants again submit that the claimed invention is patentable over the cited references for the reasons described in the earlier amendments. For the sake of brevity, those reasons will not be fully repeated but can be summarized as follows.

It is improper to combine the teachings of Marzocchi et al. with those of Miller et al. because they relate to distinctly different fields. Marzocchi et al. relates to a road paving composition whereas Miller et al. relates to a roof covering. David Jones, an expert in both the fields of roof coverings and road paving materials, has submitted two declarations giving his opinion that persons skilled in the roof covering field would not look to the road paving field for teachings that could be applicable to roof coverings.

Moreover, the teachings of Marzocchi et al. relate to glass flakes in a road paving composition, not to fibers having properties suitable for forming a roofing mat in a roof covering as recited in claim 1 and as disclosed in Miller et al. Consistent

with the Supreme Court's ruling in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. \_\_\_, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385, No. 04-1350 slip op. (U.S. 2007), in order to combine references in a rejection under 35 U.S.C. §103(a) there must be something in the references or in the generally known art to motivate the skilled artisan to make the combination. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to apply the teaching related to glass flakes in a road paving composition to fibers having properties suitable for forming a roofing mat in a roof covering.

Further, even if the teachings of Marzocchi et al. were combined with Miller et al., the resulting product would not be a roofing material having significantly improved tear strength as recited in the present claims. The Miller et al. roofing material includes a web bonded to the bottom surface of the roofing material that provides significant tear resistance. The addition of the Marzocchi et al. materials to the Miller et al. roofing material would not significantly improve the tear strength above the improvement provided by the web.

#### 35 U.S.C. 103(a) Rejection Over Miller et al. in View of Williams et al.

Claims 1-3, 5-8 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Williams et al. (US 4,265,563). Applicants again submit that the claimed invention is patentable over the cited references for the reasons described in the earlier amendments, which will be summarized as follows.

It is not proper to combine the teachings of Williams et al. with those of Miller et al. because they relate to distinctly different fields. Williams et al. relates to polymer composite articles whereas Miller et al. relates to asphalt-based roof coverings. Mr. Jones in his declaration gave his expert opinion that a person skilled in the art of roof coverings would not look to the polymer composite field for teachings that could be applicable to roof coverings.

35 U.S.C. 103(a) Rejection Over Miller et al. in View of Marzocchi et al. and Williams et al., and Further in View of Kennepohl et al.

Claims 9-15, 17-19, 21, 23 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Williams et al. (US 4,210,459), and further in view of Liang et al. (WO 00/44975).

The Examiner said that the disclosures of Miller et al. and Williams et al. fail to teach the use of elemental sulfur in the asphalt matrix. Liang et al. was cited as disclosing the addition of 0.05 to 0.2 wt% elemental sulfur to an elastomer modified asphalt for use in a roofing membrane. The elemental sulfur cross-links the elastomer to allow the use of a lower amount of elastomer while retaining the flexibility and flow resistance properties of the roofing membrane (page 2, lines 1-15). The Examiner said that it would have been obvious to modify the Miller et al. roofing shingles with the sulfur of Liang et al. with the motivation of forming a bituminous composition with a range of viscosities that are readily processed as compared with conventional non-cross-linked systems.

In contrast to Liang et al., amended claim 9 recites a coating material that consists essentially of asphalt and filler. The coating material does not include elastomer or other polymer. Therefore, based on the teachings of Liang et al., a person of ordinary skill in the art would have no motivation to add elemental sulfur to the coating material. In Liang et al., the elemental sulfur is added to the coating material in order to cross-link the elastomer and thereby adjust the viscosity of the coating material. In a coating material without a polymer, such as recited in claim 9, there would be no motivation based on Liang et al. to add the elemental sulfur. In Applicants' invention, the elemental sulfur is added to cross-link with the asphalt and form a bond with the sizing material, thereby increasing the tear strength of the roofing shingles. Liang et al. suggests neither cross-linking of the sulfur with the asphalt nor improving the tear strength of the roofing material.

Further, the teachings of Liang et al. are specific to roofing membranes, not to roofing shingles as recited in the present claims. Applicants submit that it would not

be obvious to combine the teachings of Liang et al. relating to roofing membranes with the roofing shingles of Miller et al.

In the Office Action, the Examiner stated that the declaration of Jerry Lee under 37 CFR 1.132 fails to demonstrate why the improved tear strength due to the addition of elemental sulfur is surprising and/or unexpected at the claimed values. Applicants respectfully disagree. Mr. Lee's education and work experience qualify him as an expert in the technology of roofing shingles. He stated that in his professional opinion it was a surprising and unexpected result to achieve the significant improvements in tear strength of the shingles as a result of the relatively small amounts of elemental sulfur added to the coating material. The Examiner agreed that the experimental results in the declaration show significant tear strength improvements.

This presenting of evidence showing a significant benefit along with the statement that the results were unexpected should be sufficient to overcome the prima facie case of obviousness. This is supported by CAFC cases. For example, in In re Soni, 34 USPQ2d 1684 (Fed. Cir. 1995), the Court stated:

"Applicant's showing of substantially improved results for invention, and statement that results were unexpected, should suffice to establish unexpected results absent evidence to contrary; applicants who presented specific data demonstrating substantially improved properties for claimed conductive polymer compositions... and stated that such results were unexpected, therefore established unexpected results for invention in absence of contrary evidence and successfully overcame prima facie case of obviousness."

In view of the above, it is respectfully submitted that independent claim 9 and its dependent claims are nonobvious over the cited references.

It should also be noted that new claims 28-31 have been added directed to particular embodiments of the range of elemental sulfur and the tear strength improvement. For example, new claim 28 recites adding the elemental sulfur in an amount from about 0.1% to about 2% by weight of the coating material, and new claim 30 recites a tear strength improvement of at least about 10%.

In view of the above, Applicants respectfully submit that the claimed invention is patentable over the prior art. A Notice of Allowance is respectfully requested.

Respectfully submitted,



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